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15/723,843	10/03/2017	Chirag D. PARIKH	106389-4654	3506
116387	7590	09/21/2020	EXAMINER	
Foley & Lardner LLP 3000 K Street N.W. Suite 600 Washington, DC 20007-5109			KIM, JAMES JAY	
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* CHIRAG D. PARIKH, ARUN JANAKIRAMAN,  
SARU DAWAR, JERALD J. MOY, HIMANI DESHPANDE,  
BRIAN W. SCHWANDT, BRIDGETTE L. MEYER, SHIMING FENG,  
ANNA BALAZY, VINCIL A. VARGHESE, and  
BENJAMIN L. SCHECKEL

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Appeal 2019-004100  
Application 15/723,843  
Technology Center 3700

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Before JENNIFER D. BAHR, WILLIAM A. CAPP, and  
NATHAN A. ENGELS, *Administrative Patent Judges*.

ENGELS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1, 3–13, and 15. *See* Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Cummins Filtration IP, Inc., which is a subsidiary of Cummins Filtration Inc., which is a subsidiary of Cummins International Finance LLC. Appeal Br. 2.

### CLAIMED SUBJECT MATTER

The claims are directed to a rotating separator with housing preventing separated liquid carryover. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A rotating separator for separating liquid from a fluid mixture, the rotating separator comprising:

a housing including a sidewall with an inner surface;

an annular rotating separating filter element positioned within the housing and rotatable about an axis extending along an axial direction in the housing, the annular rotating separating filter element having an inner periphery defining a hollow interior, and having an outer periphery facing the inner surface of the housing and spaced along a radial direction radially outwardly from the inner surface thereby defining a plenum therebetween; and

one or more fins extending into the plenum from the inner surface of the housing, the one or more fins forming capture grooves therebetween and helically winding downwardly around an inner circumference of the inner surface of the housing, the one or more fins comprising axially extending slots formed therethrough;

wherein the housing comprises an inlet for supplying the mixture to the hollow interior, an outlet for delivering a separated component of the mixture from the plenum, and a drain delivering separated liquid from the plenum.

### REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Eliasson	US 6,925,993 B1	Aug. 9, 2005
Lagerstedt	US 7,396,373 B2	July 8, 2008
Feltz	US 1,306,421	June 10, 1919
Hallgren	US 6,183,407 B1	Feb. 6, 2001
Heim	US 2007/0181043 A1	Aug. 9, 2007
Gronberg	US 7,185,643 B2	Mar. 6, 2007
McDowell	US 5,277,154	Jan. 11, 1994
Giannotti	US 4,643,158	Feb. 17, 1987

## REJECTIONS

Independent claims 1 and 9, and dependent claims 6 and 7, stand rejected under 35 U.S.C. § 103(a) as being unpatentable in view of the combination of Eliasson, Lagerstedt, and Feltz.

Dependent claims 3–5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable in view of the combination of Eliasson, Lagerstedt, and Feltz as applied to claim 1 in further combination with Hallgren.

Dependent claims 8 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable in view of the combination of Eliasson, Lagerstedt, and Feltz as applied to claims 1 and 9 in further view of Heim.

Dependent claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable in view of the combination of Eliasson, Lagerstedt, and Feltz as applied to claim 9 in further view of Gronberg.

Dependent claims 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable in view of the combination of Eliasson, Lagerstedt, Feltz, and Gronberg as applied to claims 9 and 10 in further view of McDowell.

Dependent claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable in view of the combination of Eliasson, Lagerstedt, Feltz, and Heim as applied to claims 9 and 13 in further view of Giannotti.

## OPINION

### *Analysis*

The Examiner cites Eliasson as disclosing most of claims 1 and 9, including a rotating separator with a filter element that rotates about an axis to separate oil from an air/oil gas mixture and to allow oil droplets to fall into a drainage chamber. Final Act. 2–3; Ans. 3–4. The Examiner notes that

Eliasson does not teach fins extending into the plenum of its separator, but the Examiner cites Lagerstedt for its teachings of the fin-related limitations and Feltz for its teachings of an axially extending slot to allow oil drainage. Final Act. 3. In support of the combination, the Examiner contends it would have been obvious to one of ordinary skill in the art “to have one or more fins in order to guide the oil downwardly towards the drain and it would have been obvious to one of ordinary skill in the art to add a slot or breakage in the continuous fin to allow oil to drain at a plurality of spots along the fin.” Final Act. 3.

Appellant contends Lagerstedt discloses a centrifugal separator with guide rails having specific shape and placement that are indispensable to the purpose of Lagerstedt’s “controlled helical direction of flow” in which “liquid can be fed out of the housing (20) in a relatively quiet lower region in the housing.” Appeal Br. 11 (quoting Lagerstedt 3:48–4:5). More specifically, Appellant quotes Lagerstedt’s statement that the arrangement of guide rails give solid and/or liquid particles “a controlled helical direction of flow downward along the inner side of the housing . . . thereby reducing the risk of liquid which has been separated out evaporating or being reincorporated into the cleaned gas flow.” Appeal Br. 11 (quoting Lagerstedt 3:58–4:5).

Appellant also describes Feltz as disclosing a breather for an engine crankcase having oppositely disposed rows of inclined deflector wings extending inwardly and upwardly inside a breather tube with “oil-receiving pockets” open at the top to receive oil. Appeal Br. 12. Appellant argues Feltz’s breather is a different type of component that would experience varying fluid flow characteristics unlike the rotating separators of Eliasson and Lagerstedt, and Appellant argues the Examiner provides no actual

reason for combining the references' teachings regarding the breather with the rotating separators. Appeal Br. 13; Reply Br. 4.

The Examiner states that combining Feltz's ports with Lagerstedt's guide rails would allow oil to drain from one fin to a fin or port beneath it by gravity to eventually reach the drain of the oil separator. Final Act. 7–8. Further, the Examiner states that such breaks in the guide rails “prevents buildup of coalesced oil due to more efficient draining” and that it therefore would have been obvious to combine Eliasson, Lagerstedt, and Feltz to arrive at the claimed invention. Ans. 5.

Having considered the arguments and evidence of record, we determine the Examiner has not sufficiently articulated a rationale for combining the references. Although the Examiner's proposed combination may be a simple combination of known elements in known ways, the Examiner does not explain, or provide evidence to support, how adding drainage ports to Lagerstedt's guide rails would be more efficient. To the contrary, Lagerstedt's statements regarding the guide rail's role in reducing evaporation or reincorporation of liquid into cleaned gas flow provides at least some evidence that it would not be more effective, and would be potentially less efficient, to add drain ports to the guide rails. Although we disagree with Appellant that the Examiner's proposed combination would render Lagerstedt inoperable for its intended purpose or change its principle of operation (Appeal Br. 14–15; Reply Br. 4–6), we determine the Examiner has not provided an adequate rationale for combining the references to arrive at the claimed invention. Accordingly, we do not sustain the Examiner's rejection of independent claims 1 and 9, nor the rejections of dependent claims 3–8, 10–13, and 15, each of which relies on the Examiner's rejection of claims 1 and 9.

CONCLUSION

The Examiner's rejections are reversed.

DECISION SUMMARY

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 6, 7, 9	103(a)	Eliasson, Lagerstedt, Feltz		1, 6, 7, 9
3–5	103(a)	Eliasson, Lagerstedt, Feltz, Hallgren		3–5
8, 13	103(a)	Eliasson, Lagerstedt, Feltz, Heim		8, 13
10	103(a)	Eliasson, Lagerstedt, Feltz, Gronberg		10
11, 12	103(a)	Eliasson, Lagerstedt, Feltz, Gronberg, McDowell		11, 12
15	103(a)	Eliasson, Lagerstedt, Feltz, Heim, Giannotti		15
<b>Overall Outcome</b>	103(a)			1, 3–13, 15

REVERSED